



LATCHING HINGE MASKING DEVICE

This application claims priority of U. S. Provisional Patent Application #60/402,500, filed 8/09/2002.

BACKGROUND OF THE INVENTION

The art of the present invention relates to paint masking devices in general and more particularly to an improved and modified hinge masking device which is utilized to cover hinges on doors and doorways during painting, coating, or finishing of the aforesaid. The device and method of use represents an improvement over the prior art by providing a unique latching mechanism and one or more relief portions for screw heads which are extended from the covered hinge.

During the process of painting a door with attached hinges, it is necessary to mask or cover the hinges to prevent paint from attaching to the hinges. When the hinge pin is removed from the hinge and the door removed from the jamb or mounting, there are two hinge plates or hinge halves present which must be covered prior to painting. The present invention represents a masking device and the method for use to cover a hinge half attached to a door or door frame while the surrounding areas are being coated with paint or other surface preparations. The device and its method of use is not affected by extended hinge screw heads.

During painting, staining, waxing and similar finishing operations to doors and door frames, it is commonly desired to prevent these coatings from coming in contact with the exposed areas of the hinge halves. It is often required to either shield the hinge halves or remove them entirely until the finishing operations are complete. One method practiced is to remove the door from its frame and to use masking tape and a sharp knife to trim the tape close to the exposed area of each hinge half. This basic technique with variations is shown and described in U.S. Patents, #5,722,120 issued 03/03/1998 to Bindschatel, et al., titled: Pre-Stamped Half-Hinge Adherent Cover, #4,921,028 issued 03/01/1990 to Schwartz, titled: Door Hardware Cover, #3,961,602 issued 06/08/1976 to Dresser, titled: Butt Covers, #4,796,330 issued 01/10/1989 to Ziegler, titled Hinge Mask, and #5,056,191 issued 10/15/1991 to Love, titled: Butt Hinge Paint Mask and Masking Method.

Another prior art method is to remove the door from its frame and then remove the hinge fasteners and the hinge halves completely from the door and door frame area. This old method then

1 requires reinstalling the hinge halves after the finishing operations are completed. Both of the
2 aforesaid methods are objectionable because of the resultant low productivity. Often residual glue
3 or adhesive left over from the taping operation requires a solvent wiping step to completely remove
4 this residue from the exposed areas of the hinge halves. Removing and reinstalling hinge halves
5 adds to the risk of damaging the newly finished door and door frames due to the amount of additional
6 handling and tool usage required to perform the task. Further, hinges that are completely removed
7 and reinstalled later run the risk of mix ups in hinge placement which could prevent proper operation
8 when articulating the door.

9 The present art hinge masking device is a one piece molded device which is self adhering to
10 a hinge half without the use of adhesives, adhesive tapes, fasteners or external clamping devices. It
11 serves as a protective mask which shields the normally exposed area of the hinge half during door
12 and door frame finishing operations. The device has a unique latching mechanism and one or more
13 relief portions for screw heads which are extended from the covered hinge.

14 The present art invention is preferably of a one piece construction. The pre-molded shape
15 of the protector allows for an easy snap in place application or removal of the device with its unique
16 latching mechanism. It covers or encases the normally exposed hinge areas and shields them against
17 coatings which are applied to the door and door frame areas as part of its finishing. In its preferred
18 form, the device is molded from a synthetic plastic resin which can be either of the rigid or
19 semi-rigid type and reused.

20 Prior art pre-molded devices such as disclosed in U.S. Patents, #5,224,240 issued 07/06/1993
21 to Smith et al. titled: *Hinge Masking Device and Method*, #5,432,979 issued 07/18/1995 to Harper,
22 titled: *Door Hardware Paint Shield*, and #4,195,590 issued 04/01/1980 to Herrington, titled *Door*
23 *Casing Hardware Paint Shield* fail to offer the combination of the unique positive latching
24 mechanism and convenience of use which the present art offers. For example, *Smith et al.* provides
25 a one piece pre-molded device but does not provide the positive latching or screw head relief which
26 the present art provides. *Harper* describes a one piece pre-molded mask which slides over the hinge
27 but must be broken for removal. *Herrington* describes a one piece pre-molded shield which slides
28 over the hinge but does not fully cover the hinge or allow for easy removal. None of the aforesaid
29 prior art devices allow for positive placement and reliable and convenient re-use of the device.

Accordingly, an object of the present invention is to provide a device and method for mask protecting a door or door frame hinge half even if the hinge half has screw heads which are extended above the level of the hinge.

Another object of the invention is to provide a device which can be quickly installed without the use of adhesives, fasteners, tape or clamps and which has a quick and secure locking mechanism.

Another object of the invention is to provide a device that can be quickly removed from the hinge half without the use of tools, and is easily and reliably reusable many times over.

A further object of the present invention is to provide a masking device of one piece construction.

A still further object of the invention is to provide an inexpensive covering device for premounted door and door frame half hinges during painting, staining, and similar operations.

Another further object of the invention is to provide a one piece part which is capable of being used on either the door half hinge, or the door frame half hinge to shield the exposed areas of the mounted half hinge.

SUMMARY OF THE INVENTION

To accomplish the foregoing and other objects of this invention there is provided a device and method for mask protecting a door or door frame hinge half. The apparatus and method is especially suited for repeated and secure covering of exposed hinge halves during painting, staining, and finishing operations.

The device is provided with two rigid half cylindrical cavities, a first cavity and a second cavity together forming a complete cavity, connected via a thin membrane area or what is commonly accepted as a living hinge. At the ends of the first cavity are end closure walls having one or more extending lips which latch over and with a large panel or long flat area attached to the second cavity. The first cavity also has a somewhat smaller or short flat area, between and connecting the end closure walls.

When the device is folded along the membrane or living hinge area the two cavity areas form a shield or cylinder around the hinge barrel. As the two cavities come together, the extending lips on the end closure walls slide over the large panel via the elastic bending of said end closure walls.

1 The elastic return to position of said extending lips holds the first cavity to the second cavity and
2 keeps the device in place. Once the extending lips are positioned over said large panel the entire
3 exposed hinge half is covered. This includes both sides of the hinge plate, its edges, the hinge barrel,
4 and its edges. By grasping the long flat area and pulling away from the short flat area the device can
5 be easily removed. Preferably the end closure walls are flexed away from said cavities to make
6 removal easier.

7 The large panel or long flat area attached to the second cavity contains one or more relief
8 portions for screw heads which are not flush with the hinge. That is, often the screws which hold
9 a hinge do not have heads which are flush with the hinge plate itself. This phenomena is often
10 caused by sloppy workmanship or misaligned screw holes. Prior art hinge covering devices have
11 not addressed this problem. If the screw heads cause the large panel or long flat area to not sit flush
12 with the hinge plate, when painted the hinge plate will have paint leak onto it. In its preferred form,
13 the present art utilizes three relief portions of circular cross section and approximately 1/16 inch
14 deep, one for each screw head of a conventional hinge. The relief portions are aligned in a pattern
15 which covers the hinge screw heads. Alternative embodiments may utilize one relief portion or a
16 plurality of relief portions of any shape or depth on said large panel which correspond to the
17 placement of screw heads in the hinge plate.

18 Although preferably molded from a one piece polymer material such as a high density
19 polyester, the device may be manufactured from a variety of materials, including but not limited to
20 wood, metals, composites, papers, and cloths.

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22 BRIEF DESCRIPTION OF THE DRAWINGS

23 Numerous other objects, features and advantages of the invention should now become
24 apparent upon a reading of the following detailed description taken in conjunction with the
25 accompanying drawings, in which:

26 FIG. 1 is a top plan view of a latching hinge masking device of the present invention in an
27 open position.

28 FIG. 2 is bottom plan view of a latching hinge masking device of the present invention in an
29 open position.

1 FIG. 3 is a left side plan view of a latching hinge masking device of the present invention in
2 an open position which is symmetrical with a right side plan view.

3 FIG. 4 is a back side plan view of a latching hinge masking device of the present invention
4 in an open position.

5 FIG. 5 is a front side plan view of a latching hinge masking device of the present invention
6 in an open position.

7 FIG. 6 is a perspective view of a latching hinge masking device of the present invention
8 placed upon a door half hinge in a closed position.

9 FIG. 7 is a front side plan view of a latching hinge masking device of the present invention
10 in a closed position.

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12 DETAILED DESCRIPTION

13 Referring now to the drawings, there is shown in FIGS. 1 - 6 a preferred embodiment of a
14 latching hinge masking device 10 having a first cavity 14, a second cavity 22 having an attached
15 panel 24 with one or more relief portions 26, a living hinge 30, and a latching mechanism 12. The
16 device 10 is particularly adapted for repeated covering of door hinges during painting, staining, or
17 refinishing procedures.

18 The present invention represents a door hinge masking device 10 utilized for masking a
19 half-hinge that is attached onto a surface of either a door or a door frame. The half-hinge has a
20 portion of the barrel that projects outwardly from the surface and an integral hinge plate with a
21 thickness embedded in the surface leaving exposed a first face or outboard surface of the hinge plate
22 and a portion of a second opposite face or inboard surface of the hinge plate. The present art device
23 is an integral unit that includes an elongate cylindrical body 28, comprised of the first 14 and second
24 22 cavities, of a size and shape sufficient to enclose the barrel portion of the half-hinge.

25 The cylindrical body 28 of the present invention has a cylindrical wall 32 of an elongate
26 length and two end closure walls 16. When closed, the device has a lengthwise opening 34 through
27 a side of and substantially parallel with the cylindrical body 28. This opening 34 forms an upper
28 lengthwise edge 19 on the first cavity 14 and a lower lengthwise edge 27 along the second cavity 22.
29 The device further includes a first cover panel 20, i.e. smaller or short flat area, attached along the

1 upper lengthwise edge **19**, or first lengthwise edge of said first cavity **14**, extending radially
2 outwardly from the cylindrical body **28**, the first cover panel **20** of a size and shape to cover the
3 exposed portion of the second face surface of the hinge plate. The device also includes a second
4 cover panel **24**, i.e. large panel or long flat area, attached along the lower lengthwise edge **27**, or first
5 lengthwise edge of said second cavity **22**, extending radially outwardly from the cylindrical body **28**,
6 the second cover panel **24** of a size and shape to cover the exposed first face surface of the hinge
7 plate. In the preferred embodiment, there exists a space **36** or lengthwise opening **34** between the
8 first **20** and second **24** cover panels approximately the thickness of the hinge plate when the device
9 is latched and closed.

10 In the preferred embodiment, the first cavity **14** or first lengthwise half cylindrical housing
11 is shaped to cover half of the hinge barrel, and the second cavity **22** or second lengthwise half
12 cylindrical housing is shaped to cover a remaining half of the hinge barrel. The device further
13 includes a hingeable membrane or living hinge **30** attached between the half cylindrical housings **14**,
14 **22** along adjacent second lengthwise edges of said first **14** and second **22** cavities opposite said
15 panels **20, 24**.

16 Yet another aspect of the invention is a method to mask a half-hinge attached onto or into
17 a surface of either a door or a door frame, the half-hinge having a portion of the barrel that projects
18 outwardly from the surface and an integral hinge plate with a thickness inlaid in the surface leaving
19 exposed a first face surface of the hinge plate with extending screw heads and a portion of a second
20 opposite face surface of the hinge plate. The method includes providing one of the devices **10**
21 described herein and utilizing the same when extending screw heads are present. The method further
22 includes opening the device to widen the lengthwise opening **34** and engaging the elongate
23 cylindrical body **28**, i.e. first cavity **14** and second cavity **22**, over the barrel portion with the cover
24 panels **20, 24** facing their respective face surfaces of the hinge plate. The method then includes
25 operating the closure means or latching mechanism **12** to hold the cylindrical body **28** around the
26 barrel portion and the cover panels **20, 24** against the exposed face surfaces of the hinge plate, and
27 then coating the surface of either the door or the door frame with a chosen surface preparation. The
28 method then includes releasing the latching mechanism **12**, and removing the device **10** from the
29 half-hinge.

1 As aforesaid, in its preferred form, the device includes two cavities **14, 22**, two flat areas **20,**
2 **24**, two end closure walls **16**, and one or more extending lips **18** which latch over and with the large
3 panel **24** or long flat area attached to the second cavity **22**. In its preferred form, the large panel **24**
4 has notches **25** in the edges where the extending lips **18** mate. Preferably these notches **25** are
5 tapered from the large panel **24** surface opposite that portion which mates with the hinge plate to
6 approximately $\frac{1}{2}$ of the thickness of said large panel **24**. This taper allows said extending lips **18** to
7 easily disengage from said large panel **24** when force is applied to said panel **24**. This allows for
8 easy opening of the device **10**.

9 In its preferred form, the latching hinge masking device **10** is a one piece molded rigid
10 thermoplastic material which has integral portions arranged so that the shapes of said portions
11 conform to that of a standard interior half door hinge. By placing the first cavity **14** with the short
12 flat area **20** against the inboard side of a mounted half hinge and bending it along the membrane or
13 living hinge area **30**, the first cavity portion **14** will then cover a portion of the hinge barrel area and
14 the exposed back portion of the hinge plate. The second cavity **22** will cover the remaining portion
15 of the hinge barrel and the second panel **24** will cover the exposed or outboard side hinge plate area,
16 including extending screwheads. The normally exposed edges or ends of the half hinge are covered
17 by the end walls **16** attached to the first cavity **14**.

18 The device **10** as shown and described is used on either the premounted half hinge of a door
19 or a door frame. The intended use is for standard prehung unfinished doors and frames used in new
20 home construction or when refinishing doors and/or the frame moldings. The device **10** snaps in
21 place with the extending lips **18** mounted on the end closure walls **16** latching over and with the
22 large panel **24** or long flat area attached to the second cavity **22**. Preferably an extending lip **18** is
23 placed onto each end closure wall **16** on the cavity side of said wall **16**. Alternative embodiments
24 may utilize only one extending lip **18** on only one end closure wall **16** or use multiple extending lips
25 **18**. The ductile material, preferably thermoplastic resin, allows each end closure wall **16** to flex as
26 the extending lip **18** slides over the large panel **24** or flat area. The natural memory of the material
27 allows the end closure wall **16** to return to the molded or original position after sliding over the large
28 panel **24**, thereby securing the device **10** around the half hinge. The large panel area **24** is designed
29 to cover the plate area or outboard side and shape of a standard hinge. The short flat area **20** covers

1 the short exposed area or inboard side of a premounted hinge half. The cylindrically shaped cavities
2 **14, 22** cover the round barrel pivot area of a hinge half and the end closure walls **16** cover the edges
3 or ends of a hinge half which are not inlaid into a door or door frame.

4 Those skilled in the art will appreciate that a door hinge masking device has been shown and
5 described. That said present art is capable of repeatedly masking half hinges while attached to a door
6 or door frame during the painting or finishing process. The device further provides a unique
7 latching mechanism which assures secure latching when attached and provides for easy removal and
8 reuse when the finishing process is complete.

9 Having described the invention in detail, those skilled in the art will appreciate that
10 modifications may be made of the invention without departing from its spirit. Therefore, it is not
11 intended that the scope of the invention be limited to the specific embodiments illustrated and
12 described. Rather it is intended that the scope of this invention be determined by the appended
13 claims and their equivalents.